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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/514,428

11/15/2004

Peter Van Hasselt

1454-1580

6193

21171

7590

11/15/2006

STAAS & HALSEY LLP

SUITE 700

1201 NEW YORK AVENUE, N.W.

WASHINGTON, DC 20005

EXAMINER

DOERRLER, WILLIAM CHARLES

ART UNIT

PAPER NUMBER

3744

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/514,428	<b>Applicant(s)</b> VAN HASSELT, PETER	
	<b>Examiner</b> William C. Doerrler	<b>Art Unit</b> 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-15-2004, 1-6-2006</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

Applicant is asked to resubmit the drawings for this application. They are not in the scanned file.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, "without any refrigerant" would be clearer as --not in direct physical contact with any refrigerant--. Applicant's device uses refrigerant, so the original wording is not accurate. The other claims depend from claim 11, so they are unclear by their association.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11,15,16,18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Steinmeyer et al '059.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. Steinmeyer et al '059 discloses a magnet with a superconducting winding 10 which is not in direct physical contact with a refrigerant, a cold head 16 of a refrigeration system 15 and a line system 37,39 for circulating refrigerant using a thermosiphon effect. Figure 5 shows part of the pipeline close to vertical (more than 1 degree from horizontal).

Claims 11,15,16,18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Steinmeyer et al '541.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Steinmeyer et al '541 discloses a magnet with a superconducting winding 10 which is not in direct physical contact with a refrigerant, a cold head 18 of a refrigeration system 16 and a line system 20 for circulating refrigerant using a thermosiphon effect. Figures 1 and 2 show part of the pipeline close to vertical (more than 1 degree from horizontal).

Claims 11 and 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Gamble et al '601.

Figures 11-13 show a thermosiphon which is cooled by a cold head of a cooler and is used to cool a superconductor winding. The refrigerant from the thermosiphon cools the winding mount, so it does not contact the winding. In regard to claims 15 and 16, part of the thermosiphon is nearly vertical, so it has an inclination of more than 1 degree from horizontal. In regard to claim 17, the dimensions are given in column 5 lines 17-26.

Claims 11 and 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Gamble et al '943.

Figures 11-13 show a thermosiphon which is cooled by a cold head of a cooler and is used to cool a superconductor winding. The refrigerant from the thermosiphon cools the winding mount, so it does not contact the winding. In regard to claims 15 and 16, part of the thermosiphon is nearly vertical, so it has an inclination of more than 1 degree from horizontal. In regard to claim 17, the dimensions are given in column 4 line 59 to the end of the column.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17,20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Steinmeyer et al reference in view of either Rojey or Laverman et al.

Each Steinmeyer et al reference, discloses applicant's basic inventive concept, a cooling system for a superconductive winding which uses a thermosyphon to cool the winding mount, substantially as claimed with the exception of using two refrigerants with different condensation temperatures in the cooling system. Rojey and Laverman et al each show this feature to be old in the thermosyphon art. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention from the teaching of either Rojey or Laverman et al to modify the thermosyphonic cooling system of either Steinmeyer et al reference by using two refrigerants with different condensation points to enable cooling over a wider range and to permit the one refrigerant to "precool" the other. In regard to claim 17, the Steinmeyer et al references do not give dimensions, but less than 10 square centimeters is seen well within the scope of typical thermosyphons and as such is seen as a matter of design choice for an ordinary practitioner in the art. In regard to claim 21, Official Notice is taken that cooled superconductor windings are required for MRI machines. Using the cooling system of

Steinmeyer for an MRI system, as it is disclosed for use with superconductor windings, would have been obvious to an ordinary practitioner in the art.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Gamble et al reference in view of either Rojey or Laverman et al. Each Gamble et al reference, discloses applicant's basic inventive concept, a cooling system for a superconductive winding which uses a thermosyphon to cool the winding mount, substantially as claimed with the exception of using two refrigerants with different condensation temperatures in the cooling system. Rojey and Laverman et al each show this feature to be old in the thermosyphon art. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention from the teaching of either Rojey or Laverman et al to modify the thermosyphonic cooling system of either Gamble et al reference by using two refrigerants with different condensation points to enable cooling over a wider range and to permit the one refrigerant to "precool" the other. In regard to claim 17, the Gamble et al references do not give dimensions, but less than 10 square centimeters is seen well within the scope of typical thermosyphons and as such is seen as a matter of design choice for an ordinary practitioner in the art. In regard to claim 21, Official Notice is taken that cooled superconductor windings are required for MRI machines. Using the cooling system of Gamble for an MRI system, as it is disclosed for use with superconductor windings, would have been obvious to an ordinary practitioner in the art.

***Allowable Subject Matter***

Claims 12-14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Intichar et al show a cooling system for a superconducting winding. Haga shows an inclined thermosyphon in the shaft of a rotating machine.

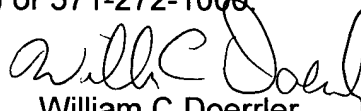
Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William C Doerrler  
Primary Examiner  
Art Unit 3744

WCD